

**Materials & Research Bureau  
Environmental Health and  
Safety (EHS) Day**

**13th Annual Bureau Training Day**

**JOM Building, Room 114**

**February 16, 2011**

**Agenda and Handouts**



## Agenda

Materials & Research Bureau Environmental Health and Safety (EHS) Day  
13th Bureau Training Day  
JOM Building, Room 114  
February 16, 2011



<b><u>Time</u></b>	<b><u>Presentation</u></b>
7:30 – 8:00 a.m.	<b>Sign In and Continental Breakfast</b>
8:00 – 9:15	<b><i>Commissioners/Directors Welcome</i></b> – NHDOT Happenings
9:15 – 10:00	<i>Recycle Now—Invest in the Future</i> Arlene Allen, NHDOT Office of Stewardship and Compliance
10:00 – 10:15	<b>Break</b>
10:15 – 10:45	<i>Environmental Management System (EMS) Awareness</i> Russell St. Pierre, NHDOT Office of Stewardship and Compliance
10:45 – 11:15	<i>Body Mechanics</i> Fred Butler, Colette Farland Vogt NHDOT Office of Stewardship and Compliance
11:15 – 12:00	<i>Regulated Substances</i> Erik Paddleford, NHDOT Office of Stewardship and Compliance
12:00 – 12:30 p.m.	<b>Lunch</b>
12:30 – 12:50	<i>Accident Investigation</i> Gary Dossett, NHDOT Office of Stewardship and Compliance
12:50 – 1:20	<i>The Power of Prevention</i> Alexis Martin, NHDOT Office of Stewardship and Compliance
1:20 – 1:35	<b>Break</b>
1:35 – 2:40	<i>Understanding Attitudes and Behaviors in the Workplace</i> Employee Assistance Program (EAP), Dept. of Health & Human Services
2:40 – 3:00	<b><i>Wrap Up</i></b> Stephen Mandeville, Safety and Environmental Coordinator, Bureau of Materials and Research

# What's in this Booklet?

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## OSC Presenters' Contact Information



**Alexis Martin**, Health & Safety Officer, (603) 271-8024, [amartin@dot.state.nh.us](mailto:amartin@dot.state.nh.us)

A native of Rochester, NH, Alexis graduated from Keene State College with a B.S. in Safety Studies and an A.S. in Chemical Dependency Issues. Alexis also holds a Master of Arts degree in Public Policy with a concentration of Strategic Administration through New England College. Alexis began working for the DOT as the Worker's Compensation Specialist in 2005, and has been overseeing the Health & Safety section of the OSC since its inception in October, 2007. Prior to working for the State, she gained 10 years of safety experience in construction and manufacturing industries.



**Erik Paddleford**, Auditor/Trainer, (603) 271-1627, [epaddleford@dot.state.nh.us](mailto:epaddleford@dot.state.nh.us)

Erik has been with the OSC since April, 2008. Erik trains and audits Department personnel regarding compliance with federal, state, and, local environmental rules and regulations and promotes environmental stewardship throughout the Department. Erik previously worked in the Bureau of Environment as an Environmental Manager addressing broad National Environmental Policy Act issues and more specific air quality concerns and as a Contamination Program Specialist performing work relating to the investigation and remediation of hazardous waste sites. Prior to working for the Department, Erik worked in the environmental consulting field in New Hampshire and California performing work related to hazardous waste site clean up activities. Erik has a Bachelor of Science degree in geology from the University of New Hampshire.



**Russell St. Pierre**, Environmental Stewardship Manager, (603) 271-5587, [rstpierre@dot.state.nh.us](mailto:rstpierre@dot.state.nh.us)

Russ directs the implementation of environmental management systems throughout the Department. He started with the OSC in May 2008, as the Environmental Training and Audit Manager within the environmental section of the OSC. Previously, he had been employed in the Bureau of Environment for 14+ years. Russ has a Masters degree in Environmental Studies.



**Fred Butler**, Safety Trainer/Auditor, (603) 271-3635, [fbutler@dot.state.nh.us](mailto:fbutler@dot.state.nh.us). Fred trains and audits Department personnel regarding compliance with health & safety program requirements. Fred was formerly employed by the NH Department of Safety. He has a bachelor's degree in marine transportation from the US Merchant Marine Academy and was the assistant fleet safety manager for Princess Cruises for 6+ years.



**Gary Dossett**, Adm. Programs Coordinator, (603) 271-7843, [gdossett@dot.state.nh.us](mailto:gdossett@dot.state.nh.us). Prior to joining the Office of Stewardship and Compliance in July of 2008, Gary was employed for more than 12 years as a Safety Coordinator for a large seacoast manufacturing company. Having left there, he served for 3 years as Safety Director in a small family owned modular home industry, with functions in Human Resources and Transportation. Gary currently possesses an Associates degree in Occupational Health and Safety and is facilitating the Worker's Compensation Program and the Drug and Alcohol Program.



Colette Farland-Vogt, Wellness Coordinator, (603) 271-0559. Colette has a MA in Counseling Psychology with concentrations in Family Therapy and Substance Abuse. She is a native of NH & graduated from the University of NH with a degree in Interpersonal Communications. Her eclectic employment background includes: Co-Director of a non-profit, adult educator, and consultant in self-improvement, a private practice in counseling, Director of a Senior Center, and a mortgage counselor. Her current position serves as an advocate for holistic health for the DOT employees. Her goal is to promote self-advocacy, so employees may achieve maximum usage & awareness of their health benefits, as well as programs and services for healthy living.

**Arlene Allen**, Environmental Training & Audit Manager, (603) 271-4046, [aallen@dot.state.nh.us](mailto:aallen@dot.state.nh.us).

Arlene Allen is the Training and Audit Manager in the Office of Stewardship & Compliance. Arlene's degree is in Environmental Conservation from the University of New Hampshire and she came to DOT with a background in natural resources. Before coming to the OSC in January of 2009, Arlene conducted outreach activities for the DES Wetlands Bureau, served as a Compliance Specialist investigating violations of RSA 483-A - the Wetlands Dredge and Fill Statute, and served as the Shoreland Protection Outreach Coordinator for the DES Shoreland Program. She is a NH Board Certified Wetland Scientist, has served on her town's conservation commission, and participated in the DES Voluntary River Assessment Program to sample the water quality of the Blackwater River.

*Arlene*

Resin Codes	Descriptions	Properties	Product Applications	Products Made with Recycled Content*
	<p><b>Polyethylene Terephthalate (PET, PETE).</b> PET is clear, tough, and has good gas and moisture barrier properties. This resin is commonly used in beverage bottles and many injection-molded consumer product containers. Cleaned, recycled PET flakes and pellets are in great demand for spinning fiber for carpet yarns, producing fiberfill and geotextiles. Nickname: Polyester.</p>	<ul style="list-style-type: none"> <li>• Clear and optically smooth surfaces for oriented films and bottles</li> <li>• Excellent barrier to oxygen, water, and carbon dioxide</li> <li>• High impact capability and shatter resistance</li> <li>• Excellent resistance to most solvents</li> <li>• Capability for hot-filling</li> </ul>	<p>Plastic bottles for soft drinks, water, juice, sports drinks, beer, mouthwash, catsup and salad dressing.</p> <p>Food jars for peanut butter, jelly, jam and pickles.</p> <p>Ovenable film and microwavable food trays.</p> <p>In addition to packaging, PET's major uses are textiles, monofilament, carpet, strapping, films, and engineering moldings.</p>	<p>Fiber for carpet, fleece jackets, comforter fill, and tote bags.</p> <p>Containers for food, beverages (bottles), and non-food items.</p> <p>Film and sheet.</p> <p>Strapping.</p>
	<p><b>High Density Polyethylene (HDPE).</b> HDPE is used to make many types of bottles. Unpigmented bottles are translucent, have good barrier properties and stiffness, and are well suited to packaging products with a short shelf life such as milk. Because HDPE has good chemical resistance, it is used for packaging many household and industrial chemicals such as detergents and bleach. Pigmented HDPE bottles have better stress crack resistance than unpigmented HDPE.</p>	<ul style="list-style-type: none"> <li>• Excellent resistance to most solvents</li> <li>• Higher tensile strength compared to other forms of polyethylene</li> <li>• Relatively stiff material with useful temperature capabilities</li> </ul>	<p>Bottles for milk, water, juice, cosmetics, shampoo, dish and laundry detergents, and household cleaners.</p> <p>Bags for groceries and retail purchases.</p> <p>Cereal box liners.</p> <p>Reusable shipping containers.</p> <p>In addition to packaging, HDPE's major uses are in injection molding applications, extruded pipe and conduit, plastic wood composites, and wire and cable covering.</p>	<p>Bottles for non-food items, such as shampoo, conditioner, liquid laundry detergent, household cleaners, motor oil and antifreeze.</p> <p>Plastic lumber for outdoor decking, fencing and picnic tables.</p> <p>Pipe, floor tiles, buckets, crates, flower pots, garden edging, film and sheet, and recycling bins.</p>

Resin Codes	Descriptions	Properties	Product Applications	Products Made with Recycled Content*
 <p><b>PVC</b> Health Concerns</p>	<p><b>Polyvinyl Chloride (PVC, Vinyl).</b> In addition to its stable physical properties, PVC has good chemical resistance, weatherability, flow characteristics and stable electrical properties. The diverse slate of vinyl products can be broadly divided into rigid and flexible materials.</p>	<ul style="list-style-type: none"> <li>High impact strength, brilliant clarity, excellent processing performance</li> <li>Resistance to grease, oil and chemicals</li> </ul>	<p>Rigid packaging applications include blister packs and clamshells.</p> <p>Flexible packaging uses include bags for bedding and medical, shrink wrap, deli and meat wrap and tamper resistance.</p> <p>In addition to packaging, PVC's major uses are rigid applications such as pipe, siding, window frames, fencing, decking and railing. Flexible applications include medical products such as blood bags and medical tubing, wire and cable insulation, carpet backing, and flooring.</p>	<p>Pipe, decking, fencing, paneling, gutters, carpet backing, floor tiles and mats, resilient flooring, mud flaps, cassette trays, electrical boxes, cables, traffic cones, garden hose, and mobile home skirting.</p> <p>Packaging, film and sheet, and loose-leaf binders.</p>
 <p><b>LDPE</b></p>	<p><b>Low Density Polyethylene (LDPE).</b> LDPE is used predominately in film applications due to its toughness, flexibility and relative transparency, making it popular for use in applications where heat sealing is necessary. LDPE also is used to manufacture some flexible lids and bottles as well as in wire and cable applications.</p> <p>Includes Linear Low Density Polyethylene (LLDPE).</p>	<ul style="list-style-type: none"> <li>Excellent resistance to acids, bases and vegetable oils</li> <li>Toughness, flexibility and relative transparency (good combination of properties for packaging applications requiring heat-sealing)</li> </ul>	<p>Bags for dry cleaning, newspapers, bread, frozen foods, fresh produce, and household garbage.</p> <p>Shrink wrap and stretch film.</p> <p>Coatings for paper milk cartons and hot and cold beverage cups.</p> <p>Container lids.</p> <p>Toys.</p> <p>Squeezable bottles (e.g., honey and mustard).</p> <p>In addition to packaging, LDPE's major uses are in injection molding applications, adhesives and sealants, and wire and cable coverings.</p>	<p>Shipping envelopes, garbage can liners, floor tile, paneling, furniture, film and sheet, compost bins, trash cans, landscape timber, and outdoor lumber.</p>
 <p><b>PP</b></p>	<p><b>Polypropylene (PP).</b> PP has good chemical resistance, is strong, and has a high melting point making it good for hot-fill liquids. This resin is found in flexible and rigid packaging, fibers, and large molded parts for automotive and consumer products.</p>	<ul style="list-style-type: none"> <li>Excellent optical clarity in biaxially oriented films and stretch blow molded containers</li> <li>Low moisture vapor transmission</li> <li>Inertness toward</li> </ul>	<p>Containers for yogurt, margarine, takeout meals, and deli foods.</p> <p>Medicine bottles.</p> <p>Bottle caps and closures.</p> <p>Bottles for catsup and syrup.</p> <p>In addition to packaging, PP's major uses are in fibers, appliances and</p>	<p>Automobile applications, such as battery cases, signal lights, battery cables, brooms and brushes, ice scrapers, oil funnels, and bicycle racks.</p> <p>Garden rakes, storage bins, shipping pallets, sheeting, trays.</p>

Resin Codes	Descriptions	Properties	Product Applications	Products Made with Recycled Content*
 <b>PS</b> <b>Health Concerns.</b> <b>When heated, chemicals can leach out.</b>	<p><b>Polystyrene (PS).</b>  PS is a versatile plastic that can be rigid or foamed. General purpose polystyrene is clear, hard and brittle. It has a relatively low melting point. Typical applications include protective packaging, foodservice packaging, bottles, and food containers.</p> <p>PS is often combined with rubber to make high impact polystyrene (HIPS) which is used for packaging and durable applications requiring toughness, but not clarity.</p>	<p>acids, alkalis and most solvents</p> <ul style="list-style-type: none"> <li>• Excellent moisture barrier for short shelf life products</li> <li>• Excellent optical clarity in general purpose form</li> <li>• Significant stiffness in both foamed and rigid forms.</li> <li>• Low density and high stiffness in foamed applications</li> <li>• Low thermal conductivity and excellent insulation properties in foamed form</li> </ul>	<p>consumer products, including durable applications such as automotive and carpeting.</p> <p>Food service items, such as cups, plates, bowls, cutlery, hinged takeout containers (clamshells), meat and poultry trays, and rigid food containers (e.g., yogurt). These items may be made with foamed or non-foamed PS.</p> <p>Protective foam packaging for furniture, electronics and other delicate items.</p> <p>Packing peanuts, known as “loose fill.”</p> <p>Compact disc cases and aspirin bottles.</p> <p>In addition to packaging, PS’s major uses are in agricultural trays, electronic housings, cable spools, building insulation, video cassette cartridges, coat hangers, and medical products and toys.</p>	<p>Thermal insulation, thermometers, light switch plates, vents, desk trays, rulers, and license plate frames.</p> <p>Cameras or video cassette casings.</p> <p>Foamed foodservice applications, such as egg shell cartons.</p> <p>Plastic mouldings (i.e., wood replacement products).</p> <p>Expandable polystyrene (EPS) foam protective packaging.</p>
 <b>OTHER</b>	<p><b>Other.</b> Use of this code indicates that a package is made with a resin other than the six listed above, or is made of more than one resin and used in a multi-layer combination.</p> <p><b>Health Concerns with poly-carbonate</b></p>	<p>Dependent on resin or combination of resins</p>	<p>Three- and five-gallon reusable water bottles, some citrus juice and catsup bottles.</p> <p>Oven-baking bags, barrier layers, and custom packaging.</p>	<p>Bottles and plastic lumber applications.</p>

**\*Recycling may not be available in all areas. Check to see if plastics recycling is available in your community.**

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**American Chemistry Council, Plastics Division**  
**Last Updated: March 2007**



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News

## Federal Report Looks at Risks from Plastics Chemical

Article date: September 16, 2008

The US National Toxicology Program (NTP) recently released its final report on the potential negative health effects of bisphenol A (BPA), a chemical widely used in consumer plastic products. The agency found that there is "some concern" about the chemical's effects on infants and children. They had lower levels of concern for other groups and concluded more research is needed to determine just what the risks of BPA exposure might be.

Their conclusion echoes that of the US Food and Drug Administration (FDA). The FDA issued a draft report last month saying that there is not enough evidence to ban BPA. A public hearing is planned for today to discuss results from their review.

Concern about the chemical, which may be linked possible reproductive and developmental problems, has been growing. In April 2008, Canada became the first country to ban baby bottles containing bisphenol A. And water bottle manufacturer Nalgene decided to phase out use of BPA in its containers in response to public concern.

Further, a new study published in the *Journal of the American Medical Association* found that U.S. adults with higher urinary concentrations of BPA had a higher prevalence of cardiovascular disease, diabetes, and liver-enzyme abnormalities, indicating the chemical may be linked to adverse health effects even at low doses. More research is needed to confirm the findings, researchers say.

The NTP report focuses primarily on the possible reproductive and developmental effects of BPA (such as changes in fertility, birth weight, and the development of certain brain regions), not on cancer. However it does note that in some animal studies, BPA has shown effects on breast and prostate tissue, as well as on how early puberty occurs. These effects *could* be linked to cancer, the report says, but the authors caution that there is not enough evidence to know whether BPA actually causes cancer – in animals or in people.

The health effects of BPA are being studied because so many people are exposed to it on a daily basis. The chemical is widely used in plastic water and baby bottles, food packaging, compact discs, and other consumer products; plastics made with BPA usually have the number 7 on the bottom. One survey conducted by the US Centers for Disease Control and Prevention detected BPA in the urine of 93% of people age 6 years and older.

### Most Studies in Animals, Not People

The effects on breast and prostate tissue were seen in baby rats. When pregnant rats were injected with BPA, their female pups showed breast tissue changes that some researchers suspected might eventually progress to breast cancer, and male pups showed prostate tissue changes that researchers thought might eventually lead to prostate cancer.

However, the report is careful to explain that these animal results are difficult to apply to humans.

For one thing, the studies did not follow the pups long enough to see whether cancer actually developed. Another problem is that while people are primarily exposed to BPA through their diet, in animal studies the chemical is often injected. The different methods of exposure may affect how the body processes the chemical – and therefore how BPA affects the body.

Animal studies suggest that the risk from exposure to BPA may be highest for infants and children. The report concludes that there is "some concern" about the effects of BPA on the brain, behavior, and prostate gland and "minimal concern" about effects on the breast in fetuses, infants and children. "Some concern" is the third level on a scale of 5; "negligible concern" is the lowest level, while "minimal concern" falls in between these two.

Even though the evidence isn't conclusive about BPA's link to cancer or other problems, Michael Thun, the American Cancer Society's vice president of Epidemiology and Surveillance Research, says limiting exposure is "prudent."

For those who are concerned about BPA exposure, the **US National Institute of Environmental Health Sciences** recommends these steps:

- » Don't microwave polycarbonate plastic food containers. Polycarbonate is strong and durable, but over time it may break down from over use at high temperatures.
- » Avoid plastic containers that have a #7 on the bottom.
- » Reduce your use of canned foods.
- » When possible, opt for glass, porcelain or stainless steel containers, particularly for hot food or liquids.
- » Use baby bottles that are BPA free.

**Citation:** DNTF Brief on Bisphenol A [CAS No. 80-05-7]. Published September 3, 2008. Authored by the National Toxicology Program.

# ENVIRONMENTAL Management Systems

AT



## EMS Benefits to the Department

- Improved understanding of key environmental issues and their impact on our operations and facilities
- Increased efficiency and use of energy and materials, thus reducing waste and associated costs
- Improved ability to meet legal compliance requirements
- Reduced number of and scope of negative impacts to the environment from operations
- Improved image and relationships with the local communities and regulatory agencies

## Key Concepts

- Ensure that environmental factors and considerations are integrated into all decision-making processes.
- Comply with applicable Federal and State environmental regulations and policies.
- Protect, preserve, conserve and, when required, restore and enhance, natural and cultural resources.
- Prevent pollution and minimize adverse environmental impacts.
- Train and educate NHDOT employees on their roles and responsibilities as environmental stewards and foster individual accountability.
- Work cooperatively with communities and agencies to form partnerships to achieve common environmental goals and objectives.



For more information on Environmental Management Systems (EMS) contact:

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Office of Stewardship and Compliance

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## What Is An EMS?

An Environmental Management System (EMS) is a systematic 5-step approach to managing work activities so as to avoid or minimize environmental impacts. It is based on the ISO 14001 Standard.

### ENVIRONMENTAL POLICY



REVIEW

PLANNING

CHECKING

IMPLEMENTATION

**ENVIRONMENTAL POLICY:** DOT's primary EMS guidance document, declaring our intentions to address environmental issues, including commitments to:

- regulatory compliance
- pollution prevention
- continuous improvement

**PLANNING:** A process that begins with completing a list of all your work activities (within the fence line) and ends with developing an action plan to reduce the impacts of those activities with the highest potential for environmental damage.

**IMPLEMENTATION:** Putting the action plan into effect, making sure everyone knows their role, providing the necessary training and resources, documenting and recordkeeping, and emergency preparedness and response.

**CHECKING:** Monitoring and measuring the effectiveness of the action plan and taking corrective actions when necessary.

**REVIEWING:** A formal opportunity for management to evaluate performance and provide direction and input.

## NHDOT ENVIRONMENTAL POLICY

The New Hampshire Department of Transportation is the State's largest public works agency. Its activities affect the environment through land use, natural resource consumption, and transportation corridor development and maintenance activities. When planning, constructing, and maintaining the state's transportation system infrastructure, and when providing for public safety and the economic strength of the state, the Department will seek to minimize environmental impacts whenever practicable. The Department will do this by **operating in compliance** with all applicable laws and regulations, by utilizing best management practices in all of our activities in an effort to **prevent pollution**, and by promoting environmental stewardship in its programs. The Department is committed to **continuously improving its environmental performance** through regular activity reviews, and by bringing forward improvements that merit implementation for reducing or eliminating negative impacts to the environment.

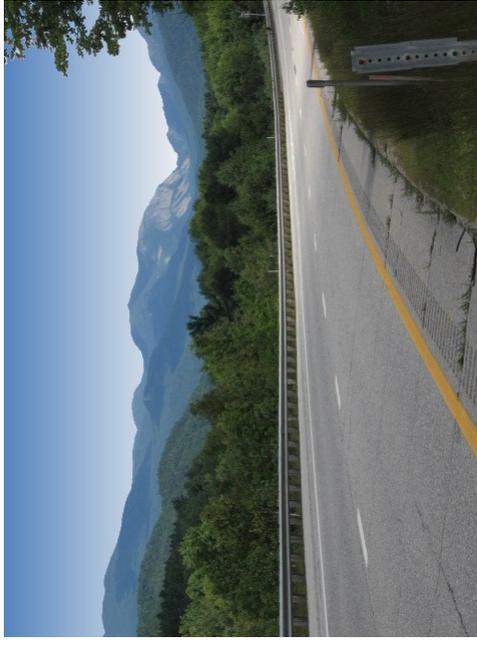
To support the performance of its undertakings in an environmentally responsible manner, the Department will:

- Develop, implement and maintain an Environmental Management System (EMS) that encompasses all Department program functions and complies with the requirements of the International Standard Organization for environmental management systems ISO 14001: 2004;
- Utilize the EMS, with support and guidance from the Office of Stewardship & Compliance, to set objectives and targets for process improvements that can be measured and monitored regularly, and in turn contribute to pollution prevention and protection of the state's natural resources;
- Minimize Department-generated waste by reducing, reusing, or recycling materials, and using environmentally friendly materials and products whenever practicable;
- Communicate our commitment to this policy to its employees, consultants, contractors, and other interested parties;
- Provide employees with training appropriate to their functions concerning the Department's environmental responsibilities, through the new employee orientation process and periodic refresher training;
- Utilize an appropriate proactive public stakeholder involvement process to address environmental concerns and facilitate problem solving in a collaborative manner; and
- Make this environmental policy available to the public and all interested parties.

## How does an EMS affect me?

All NHDOT employees should know:

- The Environmental Policy (#501.01)
- How your work activities affect the environment and how negative impacts can be controlled
- Objectives and targets for improved environmental performance in your area
- Your responsibility for emergency procedures
- Consequences of non-conformance



## Sustainability and EMS

The Department's EMS provides a framework for making our activities more sustainable and improving our environmental performance and compliance. By reducing our impacts to the environment, we reduce our true cost of doing business, enhance the State's quality of life, and sustain our operations.

## Improvement Options



Avoid lifting from the floor whenever possible. If you must lift from the floor, do not bend at the waist. The techniques shown below help the worker to keep the spine in a safer position while lifting from the floor.



**Caution:** This technique may be effective only if loads are small, light weight, and can easily fit between the knees.



*Keep the load close to your body and lift by pushing up with your legs.*



*Lean the sack onto your kneeling leg.*



*Slide the sack up onto your kneeling leg.*



*Slide the sack onto the other leg while keeping the sack close to your body.*



*As you stand up, keep the sack close to your body.*



## Section I. Easier Ways to Manually Lift, Lower, Fill, or Empty Containers



Use team lifting as a temporary measure until a more permanent improvement can be found. If possible, try to find a co-worker of similar height to help with the lift.



*Team lifting can reduce the load in half.  
Discuss your lifting plan so you  
don't make surprise movements.*



**Caution:**  
Team lifting  
can increase  
the risk of a  
slip, trip, or  
fall accident.



Use a scissors lift, load lifter, or pneumatic lifter to raise or lower the load so that it is level with the work surface. Then slide the load instead of lifting.



*Scissors lifts*



*Pneumatic lifter  
(accordion skirting)*



*Adjust the load  
lifter to shelf  
level and remove  
containers by  
sliding them out.*

# Stretching Exercises for Office Workers (but not just for office workers)

Adapted from *Stretching, Inc.*, Palmer Lake, Co 80133

Prolonged sitting at a desk or computer terminal can cause muscular tension and pain. But, by taking a five or ten minute break to do a series of stretches, your whole body can feel better. Its also helpful to learn to stretch spontaneously, throughout the day, stretching any particular area of the body that feels tense for a minute or two. This will help greatly in reducing and controlling unwanted tension and pain.

## HOW TO STRETCH

Stretching should be done slowly without bouncing. Stretch to where you feel a slight, easy stretch. Hold this feeling for 5-20

seconds. As you hold this stretch, the feeling of tension should diminish. If it doesn't, just ease off slightly into a more comfortable stretch. The easy stretch reduces tension and readies the tissues for the developmental stretch.

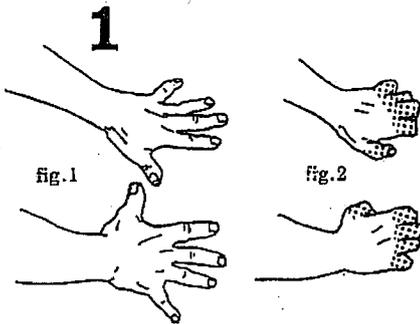
After holding the easy stretch, you can move a fraction of an Inch farther into the stretch until you feel mild tension again. This is the developmental stretch which should be held for 10-15 seconds. This feeling of stretch tension should also slightly diminish or stay the same. If the tension increases or becomes painful, you are overstretching. Ease off a bit

to a comfortable stretch. The developmental stretch reduces tension and will safely increase flexibility.

Hold only stretch tensions that feel good to you. The key to stretching is to be relaxed while you concentrate on the area being stretched. Your breathing should be slow, deep and rhythmical. Don't worry about how far you can stretch, stretch relaxed and limberness will become just one of the many by-products of regular stretching.

...Note: If you have had any recent surgery, muscle, or joint problem, please consult your personal health care professional before starting a stretching or exercise program.

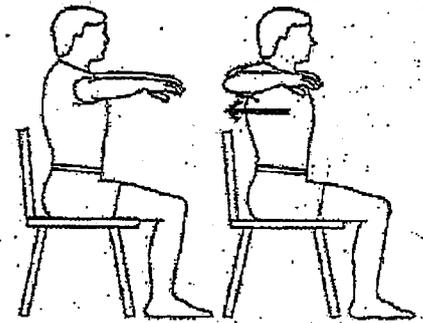
The dotted areas are those areas of the body where you will most likely feel the stretch.



Separate and straighten your fingers until tension of a stretch is felt (fig. 1). Hold for 10 seconds. Relax, then bend your fingers at the knuckles and hold for 10 seconds (fig. 2). Repeat stretch in fig. 1 once more.

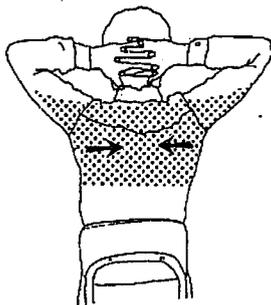


This stretch may cause people around you to think you are very strange, indeed, but you often find a lot of tension in your face from eye strain. Raise your eyebrows and open your eyes as wide as possible. At the same time, open your mouth to stretch the muscles around your nose and chin and stick your tongue out. Hold this stretch for 5-10 seconds. **Caution: If you have clicking or popping noises when opening mouth, check with your dentist before doing this stretch**



## 3. Chest Stretch

Sit with proper posture. Raise arms to shoulder height, out to the sides with the elbows bent. Squeeze the shoulder blades together, then relax.



With fingers interlaced behind head, keep elbows straight out to side with upper body in a good aligned position. Now pull your shoulder blades toward each other to create a feeling of tension through upper back and shoulder blades. Hold this feeling of mild tension for 8-10 seconds, then relax. Do several times. This is good to do when shoulders and upper back are tense or tight.



Start with head in a comfortable, aligned position. Slowly tilt head to left side to stretch muscles on side of neck. Hold stretch for 10-20 seconds. Feel a good, even stretch. Do not overstretch. Then tilt head to right side and stretch. Do 2-3 times to each side.



From a stable, aligned sitting position turn your chin toward your left shoulder to create a stretch on the right side of your neck. Hold right stretch tensions for 10-20 seconds. Do each side twice.

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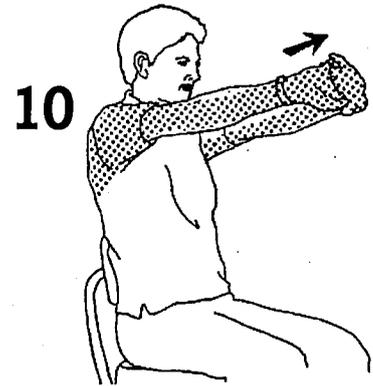


7 Gently tilt your head forward to stretch the back of the neck. Hold for 5-10 seconds. Repeat 3-6 times. **Hold only tensions that feel good.** Do not stretch to the point of pain.

3 Repeat stretch #3

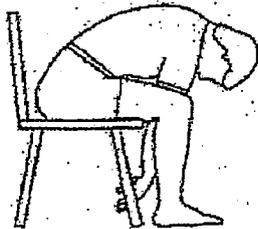


9 Hold your left arm just above the elbow with the right hand. Now gently pull elbow toward opposite shoulder as **you look over your left shoulder.** Hold stretch for 15-20 seconds. Do both sides.

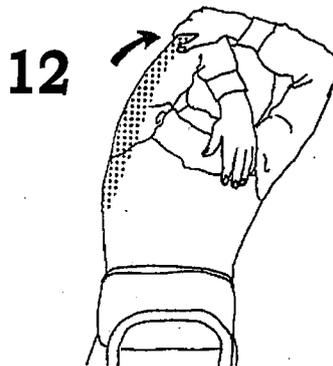


10 Interlace fingers, then straighten arms out in front of you. The palms should be facing away from you as you do this stretch. Feel stretch in arms and through the upper part of the back (shoulder blades). Hold stretch for 20-30 seconds. Do at least two times.

## 11. Low Back Stretch



11 Sit in a chair with the knees apart. Slowly bend forward and reach between the legs. Hold the stretch and return to sitting position and repeat.



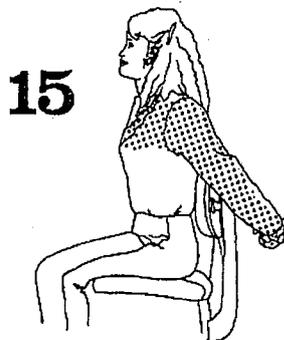
12 Hold left elbow with right hand, then gently pull elbow behind head until an easy tension-stretch is felt in shoulder or back of upper arm (triceps). Hold easy stretch for 30 seconds. Do not overstretch. Do both sides.



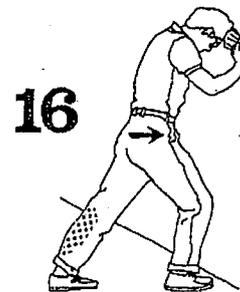
13 Hold onto your lower leg just below the knee. Gently pull bent leg toward your chest. To isolate a stretch in the side of your upper leg, use the right arm to pull bent leg across and toward the opposite shoulder. Hold for 30 seconds at easy stretch tension. Do both sides.



14 A stretch for the side of hip, lower and middle of back. Sit with left leg bent over right leg, then rest elbow or forearm of right arm on the outside of the upper thigh of the left leg. Now apply some controlled, steady pressure toward the right with the elbow or forearm. As you do this look over your left shoulder to get the stretch feeling. Do both sides. Hold for 15 seconds.



15 The next stretch is done with -fingers interlaced behind your back. Slowly turn your elbows inward while straightening your arms. An excellent stretch for shoulders and arms. This is good to do when you find yourself slumping forward from your shoulders. This stretch can be done at any time. Hold for 5-15 seconds. Do twice.



16 To stretch your calf, stand a little ways from a solid support and lean on it with your forearms, your head resting on your hands. Bend one leg and place your foot on the floor in front of you leaving the other leg straight, behind you. Slowly move your hips forward until you feel a stretch in the calf of your straight leg. Be sure to keep the heel of the foot of the straight leg on the floor and **your toes pointed straight ahead.** Hold an easy stretch for 30 seconds. Do not bounce. Stretch both legs.

**Bob & Jean Anderson, the creators of this stretching card, are also the authors of the book STRETCHING.**

For a free catalog and ordering information for currently available Stretching Inc. publications write or call:

Stretching Inc.  
P.O. Box 767  
Palmer Lake, CO 80133 U.S.A.  
FAX (719) 481-9058 or 1-800-333-1307



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Office of Stewardship and Compliance  
New Hampshire Department of Transportation  
7 Hazen Drive, Concord, New Hampshire 03302



# Environment Program 002 Regulated Substances Training Handout



## Regulated Substances aka *Best Management Practices* for Groundwater Protection Rules *ENV-Wq 401* Storage, Inspection, and Handling

### What is a regulated substance?

A regulated substance is any of the following:

(1) Oil (i.e., *petroleum* products and their by-products of any kind, and in any form but does not include natural gas, liquified petroleum gas or synthetic natural gas regardless of derivation or source);

For convenience, these two lists have been combined and can be found on the OSC intranet page. The document is entitled *Hazardous Materials*.

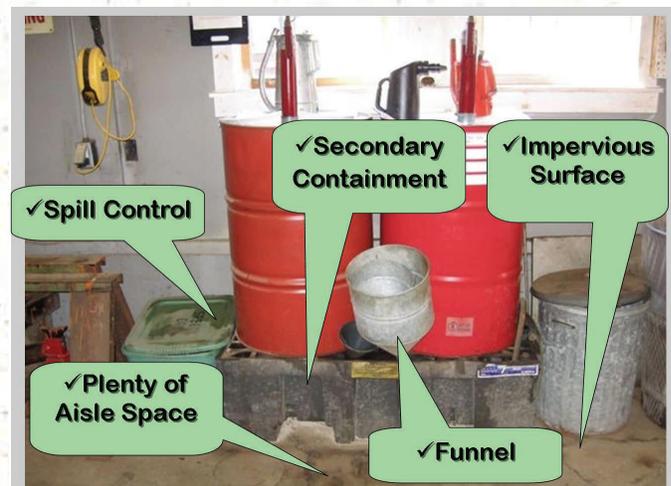
- { (2) Any substance that contains a regulated contaminant for which an ambient groundwater quality standard has been established pursuant to RSA 485-C:6; and  
(3) Any substance listed in 40 CFR 302, 7-1-05 edition.

When any of the above listed substances are stored in a container with a capacity of 5 gallons or more (**a regulated container**) and for a period of more than 10 days (**a regulated storage area**) the substance in that container is subject to the Ground Water Protection Rules.

Exceptions: ammonia, sodium hypochlorite, sodium hydroxide, acetic acid, sulfuric acid, potassium hydroxide, and potassium permanganate, **or** fuel tanks attached to a vehicle.

### Examples of regulated substances in Operations activities:

- Oil (Motor Oil, Hydraulic Oil, and Air Tool Lubricants, and Used Oil)
- Thinners and solvents
- Lubricants and sealers
- Blacktop sealer (e.g., Sakrete)
- Nailing cement
- Gasoline, diesel, and heating fuel
- Silane Siloxane (Vexcon , Sil Act-42, 100, etc.)
- Emulsion
- Form Oil and Linseed Oil  
(if the linseed oil is mixed with mineral spirits or contaminated with other substances.)



## Why is it important to handle and store regulated substances properly?

Chemicals can contaminate soil and water if they are not properly handled. Contamination can occur from leaking storage facilities, improper waste disposal, accidental spills, and even from normal use of these materials. Spills that lead to contamination can result in costly clean-up fees and fines. Following the BMP rules protects the environment, keeps us legal and reduces environmental liability, and minimizes potential cleanup costs.

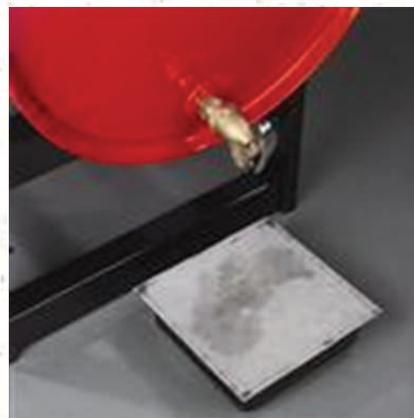
### General Requirements for all Regulated Substances:

1. **Store on an impervious surface that does not slope to a floor drain.** Surface area should be inspected to ensure no cracks or holes exist prior to storage of any regulated containers and annually thereafter during continued use of the storage area.
2. Storage areas must be **secured against unauthorized entry**, either by personal surveillance, physically-restricted access, or a combination of the two.
3. Storage areas should be **inspected weekly** for signs of spills or leakage from regulated containers.
4. The **aisle space** between regulated containers that cannot be moved by hand shall be of ample size (at least 2') to allow an inspector to determine the condition of individual regulated containers.
5. Each regulated container must be **clearly and visibly labeled** with the chemical and trade name of the material stored within.
6. Each regulated container must remain **closed and sealed** at all times except to add or remove regulated substances. Regulated containers equipped with spigots, valves, or pumps are considered closed and sealed when the spigots, valves, or pumps are closed or in the "off" position, provided that drip pans are placed and maintained under the spigots, valves, or pumps.

Regulated substances can only be transferred from or to regulated containers under the following conditions:

- i. Using funnels and drip pans ; and
- ii. Fueling or transferring shall be done only over an impervious surface.

7. **Spill control and containment equipment**, including, as a minimum, absorbents to pick up spills and leaks, must be located in the immediate area where regulated substances are transferred, used, or stored.



**Outdoor Storage is not recommended. Too many things can go wrong!**

**Setbacks from PWS Wells if Regulated Substances are Stored Outside**

<u>Flow (GPD)</u>	<u>Radius (ft.)</u>
0—750	75
751—1440	100
1441— 4320	125
4321—14,400	150
14,401—28,800	175
28,801—57,600	200
57,601—86,400	250
86,401—115,200	300
115,201—144,000	350
Greater than 144,001	400

8. In addition to the rules for indoor storage, regulated containers in **outdoor storage** areas shall:
  - a. Have secondary containment;
  - b. Be kept covered at all times unless the regulated containers are in the process of being transferred to another location;
  - c. Have a covering to keep the regulated container and the secondary containment structure free of rain, snow, or ice;
  - d. Not be stored within any of the following **set-backs**:
    - i. For surface waters, 50 feet;
    - ii. For storm drains, 50 feet;
    - iii. For private wells, 75 feet;
    - iv. The protective radius of any public water supply well (PWS);
9. Any special work sinks that are specifically designed to be used in conjunction with regulated substances must discharge to a registered holding tank. Note: Your typical sink where you wash your hands, coffee cups etc. does not need to be hooked up to a holding tank, **but**, regulated substances may not be poured down the drains of sinks that are not hooked up to a holding tank.
10. Release response information must be posted in the vicinity of the regulated containers—which means along a clearly visible path within 100’ of a telephone. When corners, walls, or rooms separate the regulated storage area from the phone, more than one release response information posting is needed. The posting must contain the following information:
  - The name of the individual designated by the owner to be contacted if a spill occurs;
  - The method by which the designated individual can be contacted when there is a release, such as by phone, or in-person at the main office;
  - The procedure for spill containment; and
  - Emergency phone numbers including 911 and, depending on local protocol: State police; Local police and fire department; Local hospital; Department of Environmental Services; Poison Control Center; and the Office of Emergency Management.
11. When regulated substances (in any quantity) are stored in an area that has a floor drain, the discharge from the floor drain must be directed to a registered holding tank or to a publicly-owned treatment plant that has approved the discharges.



Additional Resources		
<u>Resource</u>	<u>Location</u>	<u>Description</u>
Combined Federal and State <b>Hazardous Materials Listing</b>	OSC Intranet	State listed hazardous substances have been added to the federal Hazardous Materials Table in blue font.
NH Department of Environmental Services, Best Management Practices for Groundwater Protection <b>Rules</b>	www.des.nh.gov or link to DES from OSC intranet page	State Rules. CHAPTER Env-Wq 400 Groundwater Protection PART Env-Wq 401 Best Management Practices for Groundwater Protection.
<a href="http://cameochemicals.noaa.gov/search/results">http://cameochemicals.noaa.gov/search/results</a>	Link is on OSC Intranet Under Regulated Substances Program 002	This link takes you to a <b>database of hazardous materials</b> . You can enter a chemical and find fire and explosion hazards, health hazards, firefighting techniques, cleanup procedures, protective clothing, chemical properties and federal regulations. You can also enter two or more chemicals and find out if they are compatible or reactive.

Commonly Encountered Mixtures	
<b>Caution:</b> Mixing your own chemicals is dangerous and can endanger you and your co-workers.	
Product	Chemicals in Mixture
Paint Thinner	Stoddard Solvent (naptha), 1,2,4 Tri Methyl Benzene, Ethyl Acetate, Xylene, N-butyl acetate, N-butyl alcohol, denatured alcohol, petroleum distillate, acetone, toluene, methanol, cyclohexane, methyl cyclohexane, heptane
Lubricants and Cleaners	Aliphatic hydrocarbons, petroleum base oil, isopropanol, 2-propanol, dimethyl carbinol, lithium soaps (e.g. stearates)

An ounce of prevention is worth  
a pound of cure.

*Benjamin Franklin*

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# ENVIRONMENTAL Fact Sheet

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WMD-REM-13

2007

## Reporting Oil Spills, Hazardous Waste Spills and Groundwater Contamination

The State of New Hampshire has statutory and regulatory requirements regarding the reporting of discharges of both petroleum products and hazardous wastes. To promote compliance with these "duty to report" requirements, the following excerpts are presented from the appropriate laws and regulations.

### **IN THE EVENT OF A HAZARDOUS WASTE SPILL**

#### **Duty To Report, N.H. Hazardous Waste Management Act RSA 147-A:11,**

1. Any generator, operator, transporter, or employee of a hazardous waste facility who becomes aware of any storage, treatment, or disposal of hazardous waste in violation of this chapter shall immediately report the violation to the NH Department of Environmental Services Waste Management Division.
2. Any person who fails to give notice as required by RSA 147-A:11,1, shall be guilty of a misdemeanor if a natural person, or guilty of a felony if any other person.
3. Each day of a continuing violation shall constitute a separate offense.

#### **Immediate Action, "Requirements for Hazardous Waste Generators" Env-Wm 500,**

The generator shall report any discharge of hazardous waste or discharge of any material which when discharged becomes a hazardous waste that poses a threat to human health or the environment, for example, into storm or sanitary sewers, onto the land or into the air, groundwater or surface waters. Notification shall be both:

1. Immediately, not to exceed one hour from discharge discovery, to local fire department
2. Immediately, not to exceed one hour from discharge discovery, to the DES Emergency Response group at (603) 271-3899 (Monday through Friday, 8 a.m. to 4 p.m.), or to the New Hampshire Department of Safety at 1-800-346-4009 or (603) 271-3636, 24 hours/day).

### **IN THE EVENT OF A PETROLEUM (OIL) SPILL**

#### **Duty To Report , N.H. Oil Spillage In Public Waters Act RSA 146-A:5,**

1. The person/party responsible for the operation of any oil facility, carrier, or vessel that discharges oil in violation of this chapter shall immediately notify the DES Waste Management Division. Any person who fails to give such notice shall be guilty of a misdemeanor if a natural person, or guilty of a felony if any other person.
2. Each day of a continuing violation shall constitute a separate offense.
3. Any person who becomes aware of an oil discharge in violation of this chapter shall immediately notify the DES Waste Management Division.

#### **Notification, "Contaminated Sites Management" Env-Or 600**

Any responsible party or other person having knowledge of a discharge of oil shall report such discharge to the DES Waste Management Division immediately (603)271-3899 (Monday through Friday, 8 a.m. to 4 p.m.), or to the New Hampshire Department of Safety at 1-800-346-4009 or (603)271-3636, 24 hours/day), unless all of the following conditions are met:

1. The discharge is less than 25 gallons.
2. The discharge is immediately contained.
3. The discharge and/or contamination is completely removed within 24 hours.
4. There is no impact or potential impact to groundwater or surface water.
5. There is no potential for vapors which pose an imminent threat to human health.

#### **IN THE EVENT OF GROUNDWATER QUALITY VIOLATIONS**

##### **"Contaminated Sites Management" Env-Or 600**

The responsible party shall notify the DES Waste Management Division within 60 days of discovery of a violation of the ambient groundwater quality standards of Env-Or 603.01.

##### **Disclaimer:**

Information contained in this fact sheet is current as of April 9, 2007. Statutory or regulatory changes that may occur subsequent to this date may cause part or all of the information to be invalid. If there are any questions concerning the status of this information, please contact DES at (603)271-3899.

# ENVIRONMENTAL Fact Sheet



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WD-DWGB 22-4

2009

## Best Management Practices (BMPs) for Groundwater Protection

Sixty percent of New Hampshire residents rely primarily on groundwater for their drinking water. Recognizing the importance of protecting the natural quality of groundwater, the legislature passed the Groundwater Protection Act (RSA 485-C) in 1991. This legislation recognized that a wide variety of activities involve the use of materials that can, if not properly handled, contaminate groundwater. There have been numerous instances of groundwater contamination in New Hampshire from leaking storage facilities, improper waste disposal, accidental spills, and even from normal use of these materials. Potentially contaminating substances can be more safely managed if certain basic guidelines are followed. The Groundwater Protection Act directed the N.H. Department of Environmental Services to adopt rules specifying best management practices (BMPs) for the Potential Contamination Sources (PCSs) listed below.

DES developed and adopted N.H. Code of Administrative Rules Part Env-Wq 401 Best Management Practices for Groundwater Protection, (formerly Env-Ws 421) which apply to all potential contamination sources in the state. The BMPs within the rules are essentially common-sense operating practices that are simple and economical to implement. The purpose of the BMPs is to help prevent a release of regulated substances. Regulated substances include oil, as defined under RSA 146-A, III, regulated contaminants established pursuant to RSA 485-C:6, and hazardous substances listed under federal regulations at 40 CFR 302. Cleaning up the release of a regulated substance can be very expensive. Following the BMP rules reduces environmental liability and minimizes potential cleanup costs.

Potential Contamination Sources (PCSs) <sup>1</sup>	
<ul style="list-style-type: none"> <li>• Vehicle service and repair shops</li> <li>• General service and repair shops</li> <li>• Metalworking shops</li> <li>• Manufacturing facilities</li> <li>• Underground and above-ground storage tanks</li> <li>• Waste and scrap processing and storage</li> <li>• Transportation corridors</li> <li>• Septic systems (at commercial and industrial facilities)</li> <li>• Laboratories and certain professional offices (medical, dental, veterinary)</li> </ul>	<ul style="list-style-type: none"> <li>• Use of agricultural chemicals<sup>2</sup></li> <li>• Salt storage and use</li> <li>• Snow dumps</li> <li>• Stormwater infiltration ponds or leaching catch basins</li> <li>• Cleaning services</li> <li>• Food processing plants</li> <li>• Fueling and maintenance of earth moving equipment</li> <li>• Concrete, asphalt, and tar manufacture</li> <li>• Cemeteries</li> <li>• Hazardous waste facilities</li> </ul>
<p><sup>1</sup>As identified in New Hampshire's Groundwater Protection Act (RSA 485-C)</p> <p><sup>2</sup>Subject to BMPs developed and administered by NH Dept. of Food, Agriculture, and Markets</p>	

## Summary of BMP for Groundwater Protection Rules

### Storage

- Store regulated substances on an impervious surface.
- Secure storage areas against unauthorized entry.
- Label regulated containers clearly and visibly.
- Inspect storage areas weekly.
- Cover regulated containers<sup>1</sup> in outside storage areas.
- Keep regulated containers that are stored outside more than 50 feet from surface water and storm drains, 75 feet from private wells, and up to 400 feet from public wells.
- Secondary containment is required for regulated containers stored outside, except for on-premise use heating fuel tanks, or aboveground or underground storage tanks otherwise regulated.

### Handling

- Keep regulated containers closed and sealed.
- Place drip pans under spigots, valves, and pumps.
- Have spill control and containment equipment readily available in all work areas.
- Use funnels and drip pans when transferring regulated substances; perform transfers over impervious surface.

### Release Response Information

- Post information on what to do in the event of a spill.

### Floor Drains and Work Sinks

- Cannot discharge into or onto the ground.

<sup>1</sup>Regulated container means any device in which a regulated substance is stored, transported, treated, disposed of, or otherwise handled, with a capacity of five gallons or more. The term does not include fuel tanks attached to and supplying fuel to a motor vehicle.

For more information on best management practices for groundwater protection visit the DES Drinking Water Source Protection webpage at <http://des.nh.gov/organization/divisions/water/dwgb/dwspp/index.htm>, or contact the NH Department of Environmental Services at (603) 271-2947 or (603) 271-0688.

*Disclaimer: Statutory information contained in this fact sheet is current as of February 2, 2007. Statutory or regulatory changes that may occur after February 2, 2007, may cause part or all of the information to be invalid. If there are any questions concerning the status of the information, please contact DES at (603) 271-3644.*

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WD-DWGB-22-6

2010

## Best Management Practices for Fueling and Maintenance of Excavation and Earthmoving Equipment

Env-Wq 401, Best Management Practices for Groundwater Protection, applies to a variety of businesses and activities considered potential contamination sources under the Groundwater Protection Act, RSA 485-C. If you operate a *permanent* facility for fueling or maintenance of excavation or earthmoving equipment (or other vehicles), consult DES fact sheet WD-DWGB-22-4, Best Management Practices for Groundwater Protection. **If you fuel or maintain excavation or earthmoving equipment *in the field***, this fact sheet explains how to meet the requirements of the best management practices (BMP) rules. The BMP rules apply to “regulated containers” holding five or more gallons of a regulated substance, **which include motor fuels, lubricants, hydraulic fluids, other petroleum products, degreasers, and other substances that are capable of contaminating drinking water.**<sup>1</sup> The rules do not apply to petroleum storage tanks regulated under Env-Wm 1401 Underground Storage Facilities (USTs) or Env-Wm 1402 Control of Aboveground Petroleum Storage Facilities (ASTs), but may apply to the transfer of fuel or other petroleum products between ASTs/USTs and equipment or portable containers.

### **1. Store fuels and regulated substances in sealed, clearly labeled containers.**

Regulated containers must be labeled (specifying contents), closed and sealed at all times, except to add or remove fluids.

### **2. Store regulated containers on a stable, level, impervious surface.**

Regulated containers must be stored in such a way that they will not easily tip over. Fueling, fuel storage, and maintenance areas, where transfers of fuel/fluids or work on equipment or vehicles that might result in spills, must be located on level ground with an impervious floor surface constructed of concrete, asphalt, chemically compatible polymer material or any other impervious surface that will contain gas, oil or other fluids in use. If the facility is subject to Env-Wm 1402 (AST rules; see above) the impervious surface must be concrete. Impervious surfaces together with secondary containment barriers (e.g., tank vaults, positive limiting barriers, containment berms) can effectively contain spills or tank failures. Containers must not be stored on pervious surfaces (wood, soil) or otherwise come in contact with moist earth.

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<sup>1</sup> Under Env-Wq 401, “Regulated substance” means any of the following, with the exclusion of ammonia, sodium hypochlorite, sodium hydroxide, acetic acid, sulfuric acid, potassium hydroxide, and potassium permanganate:

(1) Oil as defined in RSA 146-A:2, III; (2) Any substance that contains a regulated contaminant for which an ambient groundwater quality standard has been established pursuant to RSA 485-C:6; and (3) Any substance listed in 40 CFR 302, 7-1-05 edition.

### 3. Provide secondary containment around fuel storage containers and during transfers.

Secondary containment must be provided for all regulated containers and be in place during refueling activities involving transfers of fuel from “on-road” delivery trucks, “off-road” tank trucks (referred to as “mobile refuelers”) or portable containers to field equipment.

**Option 1 (Mobile Fueling):** This involves fueling earthmoving or excavation equipment from a tank truck or some other container that is moved around the site. Secondary containment equipment used during mobile fueling should be sized to contain the *most likely* volume of fuel to be spilled during a fuel transfer.<sup>2</sup> Portable containment equipment should be positioned to catch any fuel spills due to overfilling the equipment and any other spills that may occur at or near the fuel filler port to that equipment. The selection of containment equipment and its positioning and use should take into account all of the drip points associated with the fuel filling port and the hose from the fuel delivery truck.<sup>3</sup> Personnel must attend to the fueling process to ensure that any spills will be of limited volume. See the diagram in Figure 1A and Attachment 1, photos A and B for examples of portable spill containment that may be used during mobile fuel transfers.

**Option 2 (Fuel Storage and Transfer Areas):** This involves fueling equipment in a fixed location on the site. Refueling containers (skid-mounted tanks, drums, five-gallon cans) must have secondary containment. Secondary containment areas for fuel storage tanks must be able to contain 110 percent of the volume of the largest fuel storage container and have an impervious floor. Tanks may be placed within a metal, plastic, polymer or pre-cast concrete vault providing 110 percent of the volume of the largest fuel storage container. For smaller volumes stored in fuel drums, containment pallets provide suitable secondary containment. See Attachment 1, photos E and F. Fuel transfer should be done over a flat, impervious fuel transfer area adjacent to the fuel storage tank(s). The impervious fuel transfer area should extend beyond the full reach (length) of the fuel hose to avoid spills directly onto a pervious surface. See Figure 1B. Portable containment equipment may provide both secondary containment for the fuel storage tank (110 percent of the volume) and the required impervious area (typically raised at the perimeter) necessary for conducting fuel transfers. See Attachment 1, photos C and, D. Tank storage and fuel transfers may also be within secondary containment areas constructed by forming a basin sloped down to a central low point or bermed along the perimeter, lined with a continuous sheet of 20 mil (or greater) polymer material or appropriate geomembrane liner<sup>4</sup>, and backfilled with at least six inches of sand.

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<sup>2</sup> The “most likely” volume to be spilled is dependent upon factors such as the fuel transfer rate (gallons per minute), amount of fuel being transferred, the distance between the hose nozzle and pump shut off switch, and the response time of personnel and equipment available at the facility.

<sup>3</sup> Drip points include any points from which fuel may drip to the ground if leaked from or spilled near the fuel tank filler port or the fuel nozzle on the hose. Portable containment systems typically include a floor having an impervious geotextile with an attached berm or sidewall to contain spilled fluids.

<sup>4</sup> Portable containment products must be used according to manufacturer’s specifications including those related to environmental, chemical resistance limits including exposure time, bonded seam strength, and puncture and tear strength. An ASTM Puncture rating (D4833) of 200 lbs or greater and tear strength (D4533) to equal 30/30 lb should be minimum requirements for all liners.

Figure 1A  
Containment with Impervious Surface (in grey)  
for Mobile Fuel Transfers

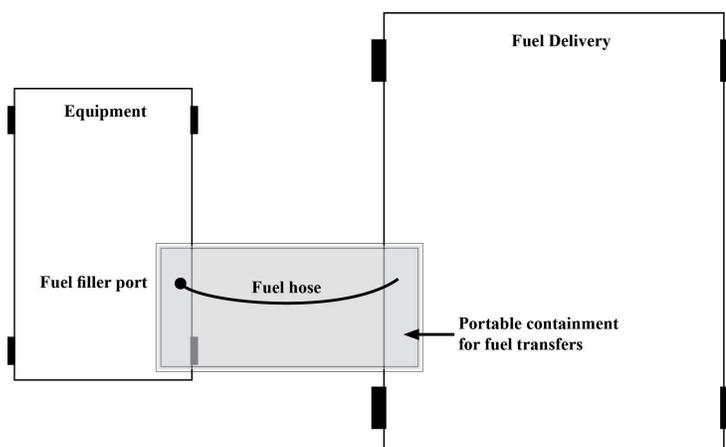
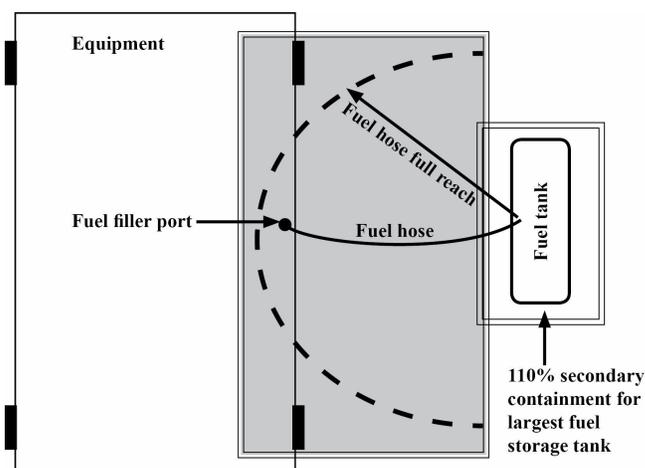


Figure 1B  
Tank Containment with Impervious Surface  
(in grey) for Fuel Transfers



#### 4. Keep secondary containment area covered and dry.

Secondary containment for outdoor storage areas (for fuel or other regulated substances) must be covered with a roof, plastic sheeting, or waterproof tarpaulins to keep containers dry, except when materials are being added or removed. The area must be kept free of rain, snow, and ice to ensure sufficient containment volume remains to contain a release from the largest storage tank. For relatively small storage areas, spill containment pallets and covers are commercially available. (See Attachment 1, photos E and F) If the water collected from the containment area has a visible sheen, DES must be contacted at (603) 271-3644 before disposal of the water.

#### 5. Comply with Related State and Federal Requirements

Construction, installation or use of aboveground tanks storing petroleum products with a capacity greater than 660 gallons in any one tank, or a combined volume of petroleum products tanks on a site greater than 1,320 gallons, must be pre-approved and registered with DES per Env-Wm 1402. (Contact the AST Program at 271-3644)

Sites storing more than a total of 1,320 gallons (in containers 55-gallons or larger) of oil products are also regulated under the federal Spill Prevention Control and Countermeasure (SPCC) Rule, 40 CFR 112. In addition to secondary containment requirements for “bulk storage” these sites must also provide spill containment during mobile fuel transfers complying with the rule’s provisions.<sup>5</sup> Both fuel trucks that come to the site to deliver fuel (e.g. “on-road”) and vehicles only used at the site to dispense fuel to equipment (e.g., “mobile refuelers”) are subject to the SPCC rules involving secondary containment during fuel transfers. Guidance on the SPCC rule with examples of secondary containment options may be found within *EPA’s Spill Prevention, Control, and Countermeasure (SPCC) Guidance for Regional Inspectors*. For a copy of this guide, please see [www.epa.gov/OEM/content/spcc/spcc\\_guidance.htm#Content](http://www.epa.gov/OEM/content/spcc/spcc_guidance.htm#Content).<sup>6</sup>

<sup>5</sup> Tanks regulated under Env-Wm 1402 (AST rules) must also comply with the federal (SPCC) and must conduct fueling activities in accordance with a facility plan summarizing the structural and/or non-structural measures in place or in use to contain spills or releases of “oil” as defined under the rule.

<sup>6</sup> For more information concerning the SPCC rule, contact the EPA Region 1 SPCC Enforcement Coordinator (Joseph Canzano) at (617) 918-1763 or [canzano.joseph@epa.gov](mailto:canzano.joseph@epa.gov).

Stationary fuel tanks over 60 gallons and portable containers under 60 gallons that provide fuel to off-road vehicles (e.g. excavators) must also comply with National Fire Protection Association (NFPA) standards, specifically NFPA 30 Flammable and Combustible Liquids Code, and, if fueling “on-road” vehicles, NFPA 30A Motor Fuel Dispensing Facilities and Repair Garages. NFPA standard 30 establishes minimum fabrication standards for tanks and containers holding flammable and combustible liquids, limits on the amount of materials that can be stored in any one pile or rack, distances between piles or racks, property line setbacks and accessibility.

Any fuel container larger than 60 gallons must meet UL standard 142, *Steel Aboveground Tanks for Flammable and Combustible Liquids* establishing minimum requirements for fabrication, installation and inspection for aboveground storage tanks.<sup>7</sup>

#### **6. Train employees to prevent, contain, and clean up spills.**

Train employees in all aspects of proper storage and handling of fuel or other regulated substances. Instruct employees to use spill prevention equipment (e.g., drip pans, etc.), be present during all fuel transfers, and *immediately* clean up spills and contaminated soil. Absorbents to pick up spills and leaks must be located in the immediate area where fuels are transferred, used, or stored. In addition, spill response information must be posted at all storage areas (poster available from DES).

#### **7. Immediately report significant or uncontrolled spills.**

Small spills that are quickly cleaned up do not need to be reported. However, if *any* of the following occurs, the spill must be immediately reported to the N.H. Department of Environmental Services at (603) 271-3899 or (603) 271-3636 after 4 p.m. on weekdays or on weekends:

- ✓ The spill is 25 gallons or more.
- ✓ The spill is not contained immediately.
- ✓ The spill and contamination are not completely removed within 24 hours.
- ✓ There is impact or potential impact to groundwater or surface water.

#### **8. Properly store and dispose of contaminated soil and materials.**

Store small quantities of contaminated soil, leaking drums/cans or used absorbent materials in covered, water-tight containers. If you are going to transport contaminated absorbents or leaking drums/cans, they must be shipped in a DOT or UN Salvage Drum that complies with DOT 49 CFR 173.3 (c). Do not mix absorbents contaminated with different petroleum products or other regulated substances. This can create a hazardous waste that requires disposal by a licensed hauler. If wastes with petroleum or other regulated substances are mixed, contact DES to determine whether it is necessary to manage the waste as a hazardous or solid waste. Determining whether the waste is hazardous may require lab testing. Contact the Hazardous Waste Management Bureau’s Compliance Section at (603) 271-2942 for more information. Information concerning proper disposal of petroleum contaminated solid wastes (e.g., absorbents) is available from the Solid Waste Bureau’s Compliance Section at (603) 271-2925.

#### **9. Keep storage areas secure.**

Fuel storage areas must be kept secure. Employ a locked gate at the entrance to the site, a fence and a locked gate around the storage area, and/or store regulated substances in a locked trailer or shed. Access to storage areas must be under lock whenever the site is unattended. If the site is inactive for a period, the storage area must be inspected weekly for leaks and security. To keep storage areas secure from collision damage, berms or boulders should be used and the storage area should be located away from the active portion of the site.

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<sup>7</sup> See Underwriters Laboratory Standards at <http://ulstandardsinfontet.ul.com/> for access to a complete copy of the standards.

**10. Keep containers away from surface waters, catch basins (stormwater), private and public water supply wells.**

Containers must be kept at least 50 feet from catch basins and surface waters, 75 feet from private wells, and outside the sanitary radius (varies from 150 to 400 feet) of a public well. Contact the local public water supplier or DES (271-0688) to determine the sanitary radius for the well.

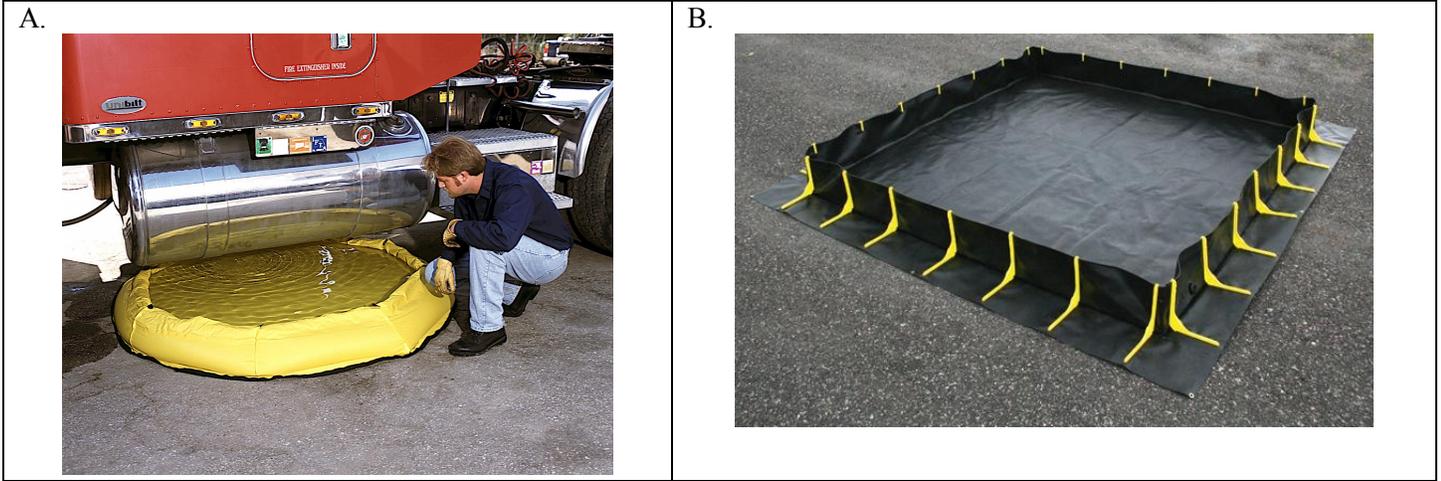
**Waivers**

While the BMP rules are intended to apply to a variety of circumstances, DES recognizes that strict compliance may not fit every situation. Requests for specific waivers should be directed to DES at (603) 271-2947.

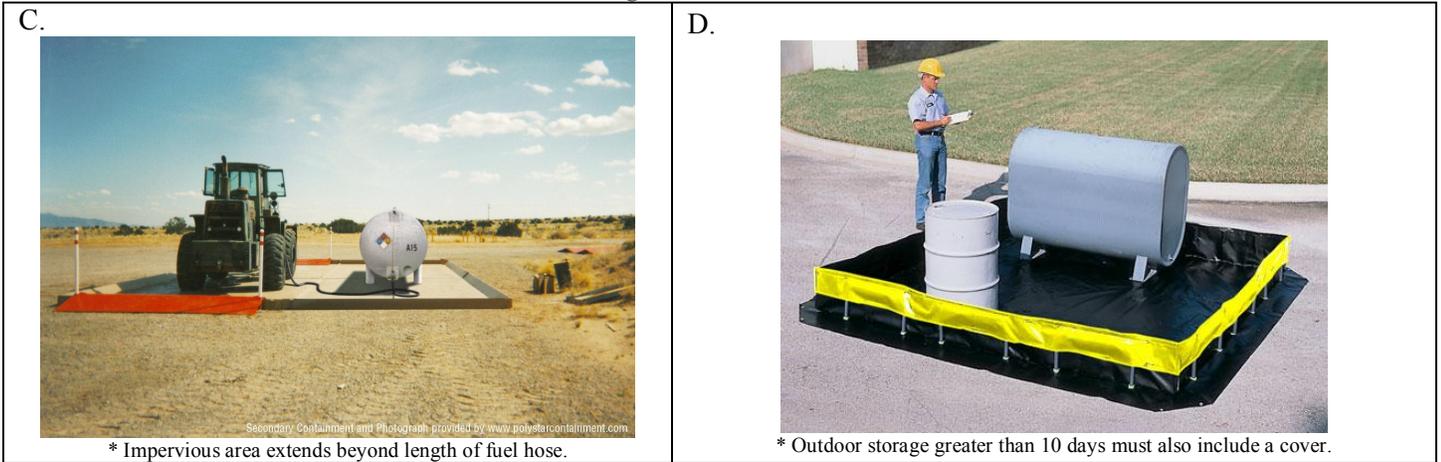
This fact sheet is a statement of DES's policy for interpreting Env-Wq 401, in terms of its applicability to fueling and maintenance of earthmoving and excavation equipment. Information contained in this fact sheet is current as of March 2010. Statutory or regulatory changes that may occur after this date may change this information. If there are any questions concerning the status of the information, please contact DES at (603) 271-2947.

**Attachment 1**  
Portable Containment, Storage and Cover<sup>8</sup>

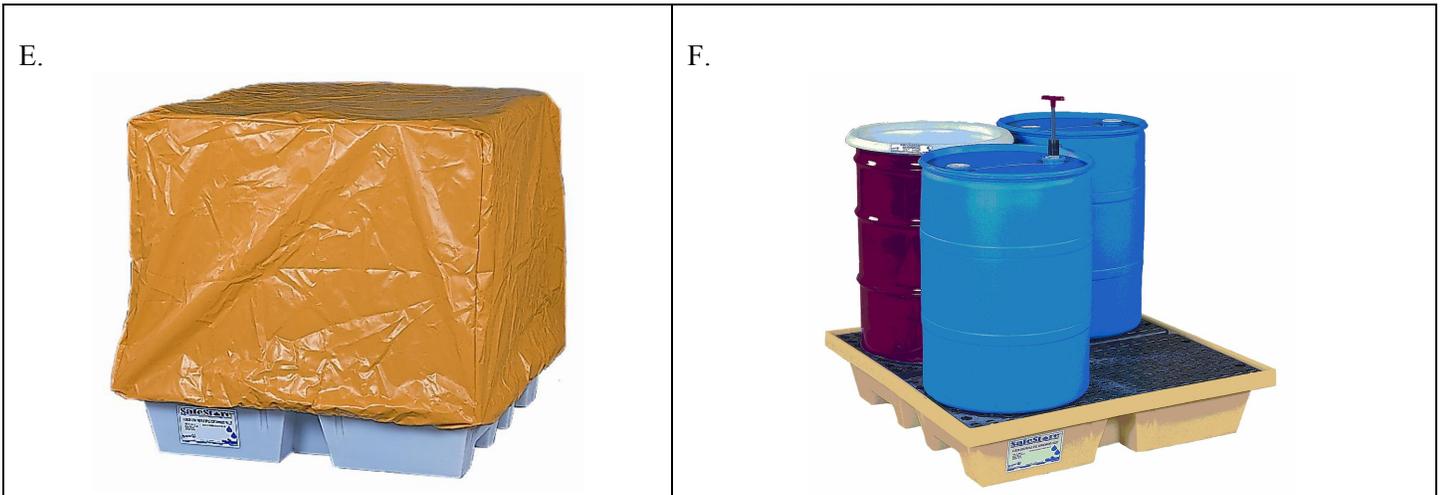
**Containment with Rigid or Flexible “pop-up” Pool or Berm (for mobile refueling)**



**Tank Storage and Fuel Transfer Area**



**Portable Drum Containment Pallet and Cover**



<sup>8</sup> Photos have been provided courtesy of Dawg Inc., Interstate Inc., Safetyshop, UltraTech International Inc., and PolyStar Inc.



WMD Site No.: _____
Project No.: _____
Project Type: _____

**NHDES WASTE MANAGEMENT DIVISION**  
**SPILL RESPONSE & COMPLAINT INVESTIGATION SECTION**  
INCIDENT REPORT FORM

**Date Incident Reported to DES:** \_\_\_\_\_; **Time:** \_\_\_\_\_; **Rec'd By:** \_\_\_\_\_

**Location of Incident**

Site Name: \_\_\_\_\_  
 Street Address/Location: \_\_\_\_\_  
 Town: \_\_\_\_\_

**Incident Type**

- Petroleum Spill to Ground
- Petroleum Spill to Surfacewater
- Hazardous Substance Spill to Ground
- Hazardous Substance Spill to Surfacewater
- Motor Vehicle Accident
- Roadside Dumping
- Air Release
- Release Inside of Building
- Other (Specify: \_\_\_\_\_)

**Party Reporting Incident**

Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Date of Incident: \_\_\_\_\_ Time: \_\_\_\_\_

Was Fire Department Notified:  Yes  No

Was Cleanup Contractor Hired:  Yes, name: \_\_\_\_\_  No

Other Agencies/Officials Responding To Incident: \_\_\_\_\_

**NHDES Responder**

Name: \_\_\_\_\_

**Actions Taken:**

- No Action Necessary
- Referred to Other Agency/Division:  
 Agency/Division Name: \_\_\_\_\_; Person: \_\_\_\_\_; Date: \_\_\_\_\_; Time: \_\_\_\_\_
- Responded (describe what actions were taken: \_\_\_\_\_)

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# New Health Assessment Tool and Digital Health Coaching for 2011!

Beginning January 1, 2011, State of New Hampshire employees will have access to a new Health Assessment Tool (HAT) called "Better Health". The Better Health HAT replaces the WebMD HAT used in previous years and brings with it advanced health and wellness tools, resources and digital health coaching. In order to be eligible for the \$200 Health Reimbursement Arrangement (HRA) for calendar/benefit year 2011, you MUST complete the new Better Health HAT in 2011. *Please note this benefit is not available for Troopers.*

**My Home** Coaching My Account Logout

My Home Coaching Sessions Track My Progress Try a Tool Updates **New**

### What would you like to do today?

**Understand my health risks.**  
It all starts here. *The HRA* creates a comprehensive summary of your health and lays out the steps to improve it. We'll start with a questionnaire, then re-order and prioritize your coaching sessions (below) according to what we learn about your health.

Learn Go

**Be more active.**  
By sneaking movement into your routine, *Better Activity* can inspire anyone - even a certified couch potato - to get up, moving, and healthy.  
Started on 08/10/2009

Detail Go

**Eat healthier.**  
*Better Eating* offers easy-to-understand, one-on-one nutritional counseling to help improve your eating habits - for life.  
Started on 05/14/2009

Detail Go

**Deal with stress.**  
*Better Coping* puts your sources and symptoms of tension under a microscope, then unveils proven strategies to help keep you calm under pressure.  
Started on 05/14/2009

Detail Go

**Manage my weight.**  
Perfect the blend of mind, body, and food. *Better Weight* can help you reach your goal weight and maximize health and performance.  
Started on 05/14/2009

Detail Go

**Sleep better.**  
Short of energy and focus during the day? *Better Sleep* is packed with effective strategies for conquering sleepless nights.

Not interested Learn Go

**Quit smoking.**  
Based on 7 key principles, *Better Breathing* crafts a quit plan that plays to your strengths to help get you past old roadblocks.

Not interested Learn Go

## ***Better Activity, Better Coping, Better Sleep, Better Eating, Better Weight, Better Breathing***

Making healthy lifestyle choices day after day can be challenging. Sometimes all it takes is a little coaching and support to help you along. That is why we're excited to introduce this new program designed to help improve your overall health. Whether you're looking for help with exercise, nutrition, weight management, stress management, sleeping better, quitting smoking or other tobacco products – this set of interactive, self-paced online programs provide personalized guidance. Plus, you'll get motivational tips and meaningful tools to help you make a rewarding and lasting change. You'll gain the knowledge and support you need to reshape both your mind and body, and gain more out of life every day.

To complete the new Better Health HAT, log on to [www.Anthem.com](http://www.Anthem.com) on or after January 1, 2011 and click on the far right purple Health & Wellness Tab. Click on the Better Health Banner, read and accept the Welcome Letter and click "Go" in the top box with the sunflower to complete the new HAT. Information about how to register on the new Anthem website, Better Health HAT Frequently Asked Questions, 2011 Better Health HAT Worksheet and "Click-by-Click" instructions on taking the Better Health HAT can be found at: [http://admin.state.nh.us/hr/flexible\\_spending.html](http://admin.state.nh.us/hr/flexible_spending.html)



## Your Medical Benefit Program Explanation of Your Wellness Benefits

- **HEALTH EQUIPMENT REIMBURSEMENT**- State of New Hampshire HMO members are eligible to receive reimbursement for up to \$200 per subscriber contract per calendar year (January 1 – December 31) for the purchase of one piece of home exercise equipment that provides a cardiovascular/muscular total body workout. Equipment must be new and purchased at a retail store. POS members are not eligible for this benefit.
  - The following pieces of equipment are eligible for reimbursement: Treadmills, Stationary Cycles, Bike Stands (*to convert road bike to stationary cycle*), Stair Climbing Machines, Elliptical Machines, Rowing Machines, Cross-country Ski Machines, Air Walkers, Home Gyms, Total Body Weight Resistance Machines
  - The following pieces of exercise equipment are not eligible for reimbursement: Muscle-specific resistance equipment such as abdominal rollers, thigh or buttocks machines; exercise videos or mats; outdoor recreational equipment such as golf clubs, bicycles, game balls, skates, skis, tennis racquets, or rollerblades; exercise clothing or shoes and any used equipment.

Please call Anthem Blue Cross and Blue Shield Customer Service at (800) 933-8415 to confirm coverage for a specific piece of equipment.

- **GYM/FITNESS FACILITY REIMBURSEMENT**- State of New Hampshire HMO members are eligible for up to \$450 per subscriber contract per calendar year (January 1-December 31) that have not already taken advantage of the \$200 equipment reimbursement benefit (explained above) within the same calendar year. POS members are not eligible for this benefit.

For employees that join an Anthem approved fitness facility, the facility will directly bill Anthem monthly for your membership dues up to \$450 for the months that you \*actively participate. You are responsible for any other fees, including joining fees and fees beyond the \$450 calendar year benefit.

\*Anthem will pay your monthly membership fee if you actively participate. This means you must visit the facility no less than 8 times per month to avoid being billed directly by the facility.

For subscribers who choose not to use the gym/fitness facility reimbursement benefit, they can transfer this benefit to another family member who is enrolled on their policy. Please call Anthem Blue Cross and Blue Shield Customer Service at (800) 933-8415 to request your benefit be transferred.

- **Kickboxing and other fitness activities**- As long as the facility is on Anthem's Approved Fitness Facilities List, HMO employees are eligible for the \$450 per year for membership dues under the gym/fitness facility reimbursement benefit as long as they continue to actively participate (8 times per month).
- **CHERP**- Community Health Education Reimbursement Program- (HMO & POS) – Employees that participate in an Anthem approved class (see the CHERP list) are eligible for reimbursement up to \$150, per family per calendar year.  
[http://admin.state.nh.us/hr/documents/anthem\\_cchep.pdf](http://admin.state.nh.us/hr/documents/anthem_cchep.pdf)
- **YOGA**- You will notice that Yoga appears on both lists, approved Fitness Facilities and CHERP. What does this mean? Two things:
  1. It means that an HMO or POS employee that would like to try out a yoga facility or attend one of their special classes that run for a short period, can submit a receipt and a CHERP form and be reimbursed up to \$150 for the class (per calendar year).
  2. It also means that HMO employees can join an Anthem approved Yoga facility and attend their classes as often as they would like but no less than 8 times per month. You must attend 8 times per month to remain eligible for the benefit. Just like the Gym reimbursement.

**Note:** HMO employees married to other HMO state employee's- both employees are eligible for either the \$200 health equipment reimbursement or \$450 per calendar year gym/fitness facility reimbursement along with the CHERP as outlined above. Please call Anthem Blue Cross and Blue Shield Customer Service at (800) 933-8415 to advise them that your spouse is also a state employee.

**Important Fact:** ALL of these benefits are taxable benefits.

For further assistance, please call Anthem Blue Cross and Blue Shield Customer Service at (800) 933-8415.

Find the forms and more information here: <http://admin.state.nh.us/hr/formsH&D.html>